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Subject: Question and Answer Set 4
Trinity and NERSC-8 Computing Platforms Project
LA-UR-13-26565

Greetings:

Interested parties are advised of the following questions or concerns that have been submitted to the Trinity and NERSC-8 Project team and to the accompanying Project responses below:

Question/Issue 1

Will both ACES and NERSC be able to return failed hard disk drives or should vendors include "hard drive retention" in their proposals?

Project Response 1

NERSC: Hard drives for NERSC-8 can be returned as part of the standard repair process.

TRINITY: Any electronic component of the system that is capable of retaining user data during a powered-off state will not be returned to the vendor as part of the RMA process.   The scope of parts not returned to the vendor may extend beyond "hard drives".

Question/Issue 2

Please provide additional information on the intended use of the stack trace facility mentioned in in the Technical Requirements Section 3.3.16.   In what context will the stack trace be used? For instance, is this to be used for logging or status check purposes (i.e. from the application itself), or is the intended use for debugging during the development of the application, or for debugging production runs to list the stack trace of "stuck" processes?

Project Response 2

Vendors should proffer specifics of any tools in their software proposals that provide stack-tracing information along with the abilities and limitations of that software. The tool set should also include the ability for a process (or thread) to obtain a stack-trace of itself while running.

Question/Issue 3

This question is on the three codes described in the Trinity Capability Improvement Metric v2.4 document.

In spreadsheet "TrinityCIbaselinesv1.xls", performance on the 3 Capability Improvement codes on the Cielo system is shown at different node counts. What is the memory footprint per node, for each of the node counts, on the 3 codes, PARTISN, SIERRA, and QBOX.

Project Response 3

The Trinity Capability Improvement applications nominally use 1 GB to 1.5 GB per MPI rank. The codes were benchmarked on Cielo, which has 16 cores per node and we used 1 MPI rank per core, hence memory usage is 16 GB to 24 GB per node. The data provided in the spreadsheet is a weak scaled study; hence, this requirement is for all scales reported.

Question/Issue 4

Technical Requirements Section 3.5.1

In the Trinity/NERSC-8 benchmark results spreadsheet for the STREAM micro-benchmark, please define "Fully Packed" vs "Minimum Concurrency".

Project Response 4

Please see the Stream Run Rules provided.   A node is considered 'fully packed' when all hardware cores and hardware threads are utilized. For the 'minimum concurrency' case, the Offeror is allowed to determine the minimum concurrency, including the balance of tasks and threads that are needed to achieve maximum bandwidth.

Question/Issue 5

Technical Requirements Section 3.5.1

In the Trinity NERSC8 benchmark results spreadsheet- for SMB, MPI-Overhead benchmark, the spreadsheet shows only one column of results, but the benchmark requirements indicate two set of results corresponding to both 'send' and 'recv'. Please clarify.

Project Response 5

Offerors should provide results for "send" and "recv" in the spreadsheet by adding a 2nd column of results.

Question/Issue 6

Is it possible to get more granularity on the SSP NERSC-Hopper measurement data? The granularity we are looking for is computation time/communication on small/Large inputs, memory bandwidth utilization, etc.? Can this information be shared other than what is listed on the Hopper Reference SSP at http://www.nersc.gov/systems/trinity-nersc-8-rfp/draft-nersc-8-trinity-benchmarks/ssp/?

Project Response 6

We will not be releasing any further performance data for the benchmarks. Please note that a number of the benchmark sample output files include profiling data. The benchmark output files listed below include profiling data from IPM.

>GTC/sample_outputs/XE6.PGI.19200p.out
>GTC/sample_outputs/XE6.PGI.64p.32mpiranks.out
>GTC/sample_outputs/XE6.PGI.64p.out
>
>MILC7/sample_outputs/large.XE6.PGI.24576p.out
>
>miniDFT/sample_outputs/single-node.out.ref
>
>SNAP/small/SNAP.small-src_opt0-16x16x16
>SNAP/large/SNAP.large.o3264417
>
>UMT_v1.1/sample_outputs/large.out

Question/Issue 7

The instructions to offerors indicate the Technical Data Sheet (No. 6) and the Environmental Safety and Health Worksheet (No. 5) are within the Technical Volume's 150 Page Limit. Would LANS consider treating these two items (No. 5 and No. 6) similar to the C Attachments? Would LANS consider removing No .5 and No. 6 from the 150-page limit associated with the Technical Volume?

Project Response 7

Two amendments have been made to the RFP. The first amendment was to remove Document No. 5 from Technical Proposals.

The second amendment was to increase the limitation on the maximum number of pages for Technical Proposals from 150 to 200 pages. Document No. 6 should be included as part of the Offeror's Technical Proposal.

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